

CLAIMS

1. A limiting device for limiting relay welding, comprising:
 - a power source;
 - a boosting means for boosting a power source voltage of the power source to a predetermined voltage and for outputting the boosted voltage;
 - a relay circuit that switches between a conducting state for conducting the boosted voltage and a non-conducting state for blocking the boosted voltage;
 - an abnormality detecting means for detecting an abnormality of the boosting means through monitoring of the boosted voltage; and
 - a relay controlling means for turning the relay circuit to an off state when the boosted voltage becomes less than a predetermined threshold value in a state where the abnormality of the boosting means is detected.
2. The limiting device according to claim 1, further comprising:
 - a power source relay circuit that is connected between the power source and the boosting means, wherein the power source relay circuit switches between a conducting state for conducting the power source voltage from the power source to the boosting means and a non-conducting state for blocking the power source voltage from the power source to the boosting means; and
 - a power source relay controlling means for turning the power source relay circuit to an off state such that the supply of the power source voltage to the boosting means from the power source is blocked when the abnormality of the boosting circuit is detected by the abnormality detecting means.
3. The limiting device according to claim 1 or 2, further comprising a boost stopping means for commanding the boosting means to stop the boosting of the voltage when the abnormality of the boosting circuit is detected by the abnormality

detecting means.

4. A motor driving apparatus, comprising:

a power source;

a boosting means for boosting a power source voltage of the power source to a predetermined voltage and for outputting the boosted voltage;

a motor;

a motor driving means for operating the motor by outputting the boosted voltage to the motor;

a relay circuit that is located between the motor and the motor driving means, wherein the relay circuit switches between a conducting state for conducting the boosted voltage to the motor and a non-conducting state for blocking the boosted voltage to the motor;

a controlling means for controlling an operation of the motor through the motor driving means;

an abnormality detecting means for detecting an abnormality of the boosting means through monitoring of the boosted voltage outputted from the boosting means; and

a relay controlling means for turning the relay circuit to an off state when the boosted voltage becomes less than a predetermined threshold value in a state where the abnormality of the boosting means is detected.

5. The motor driving apparatus according to claim 4, wherein:

the motor provides a steering assist torque to a steering mechanism of a vehicle; and

the controlling means operates the motor based on at least a steering operation of a driver such that a target steering assist torque is generated.

6. The motor driving apparatus according to claim 4 or 5, further comprising:
 - a power source relay circuit that is connected between the power source and the boosting means, wherein the power source relay circuit switches between a conducting state for conducting the power source voltage from the power source to the boosting means and a non-conducting state for blocking the power source voltage from the power source to the boosting means; and
 - a power source relay controlling means for turning the power source relay circuit to an off state such that the supply of the power source voltage to the boosting means from the power source is blocked when the abnormality of the boosting circuit is detected by the abnormality detecting means.
7. The motor driving apparatus according to any one of claims 4 through 6, further comprising a boost stopping means for commanding the boosting means to stop the boosting of the voltage when the abnormality of the boosting circuit is detected by the abnormality detecting means.